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1   IN THE SPECIFICATION

2   On page 7 replace the first paragraph of the 'DESCRIPTION OF THE INVENTION' as follows:

3   Referring first to Figure 1, an advantageous embodiment of the present invention

4   comprises a transmitter 10 connected to a receiver 20 via a communication channel 30. In

5   operation, the transmitter 10 receives a sequence of information bits 50 from an

6   information source 40. The transmitter converts the information bits 50 into multilevel

7   symbols 60 for transmission to the receiver via the communication channel 30. The

8   multilevel symbols 60 are of a complex form having a real part and an imaginary part.

9   The communication channel 30 introduces noise to the multilevel symbols 100 to

10   produce a flow of noisy multilevel symbols 70 into the receiver 20. The receiver then

11   serially recovers the information bits from the received symbols 70. The recovered

12   information bits 80 bits 90 are then supplied to a recipient system (not shown).

13   On page 5 replace the last paragraph extending onto Page 6 as follows:

14   Viewing the present invention from yet another aspect, there is provided a multilevel

15   coding scheme for block codes that uses a combination of block-encoded bits and

16   uncoded bits in selecting multilevel symbols. The advantage of allowing for uncoded bits

17   in the mapping function is increased flexibility, particularly in selecting the size of the

18   Quadrature Amplitude Modulation (QAM) QAM symbol constellations. Another

19   advantage is additional performance gain due to high spectral efficiency. Irrespective of

20   the block code employed, encoding the 4 LSBs of the transmitted 2D symbols is

21   sufficient to achieve acceptable performance for all constellations of size greater than 16.

22   On page 8 replace the last paragraph as follows:

23   When the symbol constellation employed in the symbol mapper 120 is a square QAM

24   constellation (i.e., wherein b defined below is even), and provided that the in-phase and

25   quadrature components of the noise at the input of the soft demapper 130 are

26   independent, soft demapping can be achieved independently for the real and imaginary

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1   parts of the complex symbols received. The computational complexity of soft demapping

2   is substantially reduced in comparison with joint demapping of real and imaginary signals

3   jointly. Square QAM constellations will therefore be considered for the purposes of this

4   explanation. However, extensions to cover other types and shapes of constellations can

5   easily be derived. It will thus suffice to describe multilevel LDPC encoding and decoding

6   for L-ary PAM ($L = 2^b$) with the symbol alphabet

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